NOAA Research in Virginia

VA-1 through 11 (Statewide)

Climate and Global Change Program

NOAA is responsible for providing climate information to the nation in order to prepare and protect climate sensitive sectors of society and the economy. To carry out this mission, NOAA's Climate and Global Change Program conducts focused scientific research to understand and predict variations of climate. The program is comprised of a number of research elements, each focusing on a specific aspect of climate variability. Taken together, this research contributes to improved predictions and assessments of the effects of climate variability and change on different environments over a continuum of time scales from season to season, year to year, and over the course of a decade and beyond. This research is accomplished through the strong support of the academic and private sectors, as well as NOAA and other federal laboratories. In FY 2001, NOAA's Climate and Global Change Program provided approximately $313,956 in support of climate research in the State of Virginia. For more information please visit http://www.ogp.noaa.gov

VA-1, 2, 3, 4, 5, 8, 11 (Based in Charlottesville - serves entire Virginia coast)

National Sea Grant College Program
Virginia Sea Grant Program

The Virginia Sea Grant Program is part of the National Sea Grant College Program, a university-based program funded by NOAA and focused on stewardship of the nation's marine, coastal, and Great Lakes resources. Sea Grant institutions collaborate closely to respond to issues of regional and national importance in areas such as marine biotechnology, fisheries, and enhanced coastal development. The Virginia Sea Grant Program is based in Charlottesville and is administered through the Virginia Graduate Marine Sciences Consortium which includes the College of William and Mary's Virginia Institute of Marine Science, the University of Virginia, Old Dominion University, and Virginia Tech. This year's key research projects included a breakthrough in the culture of cobia, refinements in processes to enhance the safety of seafood through hazard analysis critical control point principles (HACCP), and advances in inactivating pathogens in ballast water through photon engineering. Virginia Sea Grant also works with Maryland Sea Grant and other organizations in efforts to understand and restore the Chesapeake Bay, including an ongoing study focusing jointly on the environmental effects of contaminated sediments on living organisms as well as mitigation of these effects through habitat restoration. In FY 2001, the Virginia Sea Grant projects received approximately $1.4 million from the National Sea Grant College Program in support for its core research in addition to support for several National Strategic Investment projects during 2001. For more information please visit http://www.virginia.edu/virginia-sea-grant/

VA-1, 2, 3, 4, 8, 11 (coast)

Atlantic Oceanographic and Meteorological Laboratory
Hurricane Research

The Atlantic Oceanographic and Meteorological Laboratory's Hurricane Research Division (HRD) conducts an annual field program during peak hurricane season, flying NOAA's two WP-3D Hurricane Hunter aircraft into all hurricanes threatening US coastlines. Dropsondes and onboard radar are used to profile hurricane winds and storm structure. HRD scientists then transmit real-time information to the National Hurricane Center (NHC) at the Tropical Prediction Center, one of NOAA's National Centers for Environmental Prediction. An HRD workstation at NHC processes the aircraft data to generate products for hurricane specialists. NOAA's G-IV jet is also used in the field program to profile wind currents surrounding and influencing the storm's track. HRD scientists incorporate these and other data to create wind analyses of hurricanes. These analyses are crucial in identifying regions of strong winds in the storm and are distributed to local emergency managers for hurricane warning and evacuation determinations. HRD scientists are also studying the characteristics of hurricane winds before and after landfall to help determine expected wind impacts as a hurricane moves over land. For more information please visit http://www.aoml.noaa.gov/hrd/

VA-1, 2, 3, 4, 8, 11 (coastal waters)

National Undersea Research Program
Mid-Atlantic Bight National Undersea Research Center

The Mid-Atlantic Bight (MAB) National Undersea Research Center supports undersea research in the Mid-Atlantic Bight, a region which extends from Montauk, N.Y. to the Virginia/North Carolina border. MAB is administered by the Institute of Marine and Coastal Sciences at Rutgers University in New Brunswick, New Jersey. It is one of six regional centers supported by the National Undersea Research Program (NURP). The Center provides access to undersea research platforms (such as submersibles, remotely operated vehicles, undersea sensors and sampling equipment, and SCUBA), including Long Term Environmental Observatories (LEOs). Key research includes processes governing change and stability in ecosystems of the seabed and coastal and oceanic waters; distinguishing between natural and anthropogenic changes in the marine environment; characteristics of essential fish habitat; recruitment of marine organisms; and the effects of physical and environmental processes on water disposal, fisheries, nuisance algal blooms, biodiversity/habitat, hypoxia, toxic contaminants and pathogens. The FY 2001 funding for the MAB center totaled $1.34 million. For more information please visit http://marine.rutgers.edu/nurp/mabnurc.html

VA-3, 4, and 9 (Norfolk, Driver, and Blacksburg)

Forecast Systems Laboratory
GPS Meteorological Observing Systems

NOAA's Forecast Systems Laboratory (FSL) operates a rapidly expanding network of GPS Meteorological (GPS-Met) Observing Systems to monitor the total quantity of precipitable water vapor in the atmosphere. Currently, there are 93 systems over the contiguous 48 states and Alaska, and plans are being made to extend these observations to Hawaii, Puerto Rico, the Caribbean Islands,

and Central America. Water vapor is an important but under-observed component of the atmosphere that plays a major role in severe weather events and the global climate system. GPS-Met systems provide accurate water vapor measurements under all weather conditions, including thick cloud cover and precipitation, and do so at very low cost. The network is being developed by FSL in cooperation with federal, state and local government agencies, universities, and the private sector. The GPS stations provide high-accuracy surveying and navigation services for National defense, automated agriculture, safe land and marine transportation, government infrastructure management, and 911 emergency response services. Fortuitously, these systems can also be used for meteorology with the addition of surface weather sensors. GPS-Met systems in Virginia are operated by NOAA near Blacksburg, by the U.S. Department of Transportation near Driver, and by NASA on the Chesapeake Light Ocean Platform near Norfolk. For more information please visit http://www.gpsmet.noaa.gov/jsp/index.jsp

VA-10 (Sterling)

Air Resources Laboratory
Integrated Surface Irradiance Study

Solar radiation is the driving energy for the geophysical and biochemical processes that control weather and life on earth, so understanding the global surface energy budget is key to understanding climate. Because it is impractical to cover the earth with monitoring stations, the answer to global coverage lies in reliable satellite-based estimates. Accurate and precise ground-based measurements in differing climatic regions are essential to refine and verify the satellite-based estimates, as well as to support specialized research. The Integrated Surface Irradiance Study (ISIS) is a continuation of earlier NOAA surface-based solar monitoring programs in the visible and ultraviolet wavebands. ISIS provides basic surface radiation data with consistency and accuracy. NOAA's Air Resources Laboratory operates a national broadband solar radiation network, including a station in Sterling that monitors incoming radiation. For more information please visit http://www.atdd.noaa.gov

VA-11 (Falls Church)

Ocean Exploration

In 2001, with a $4 million appropriation from Congress, NOAA launched a systematic, strategic effort through the Office of Ocean Exploration to search and investigate the oceans for the purpose of discovery. Collection and distribution of ocean science data is critical to a successful program of Ocean Exploration. The Office of Ocean Exploration worked with Falls Church-based Mitretek Systems, Inc. to evaluate alternative strategies for data management. The importance of data management was stressed in the report of the President's panel on Ocean Exploration. For more information please visit http://www.oceanexplorer.noaa.gov

For further information about these and other NOAA programs, please contact NOAA's Office of Legislative Affairs at (202) 482-4981.

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